Defense Standardization Program

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MARKET ANALYSIS FOR NONDEVELOPMENTAL ITEMS

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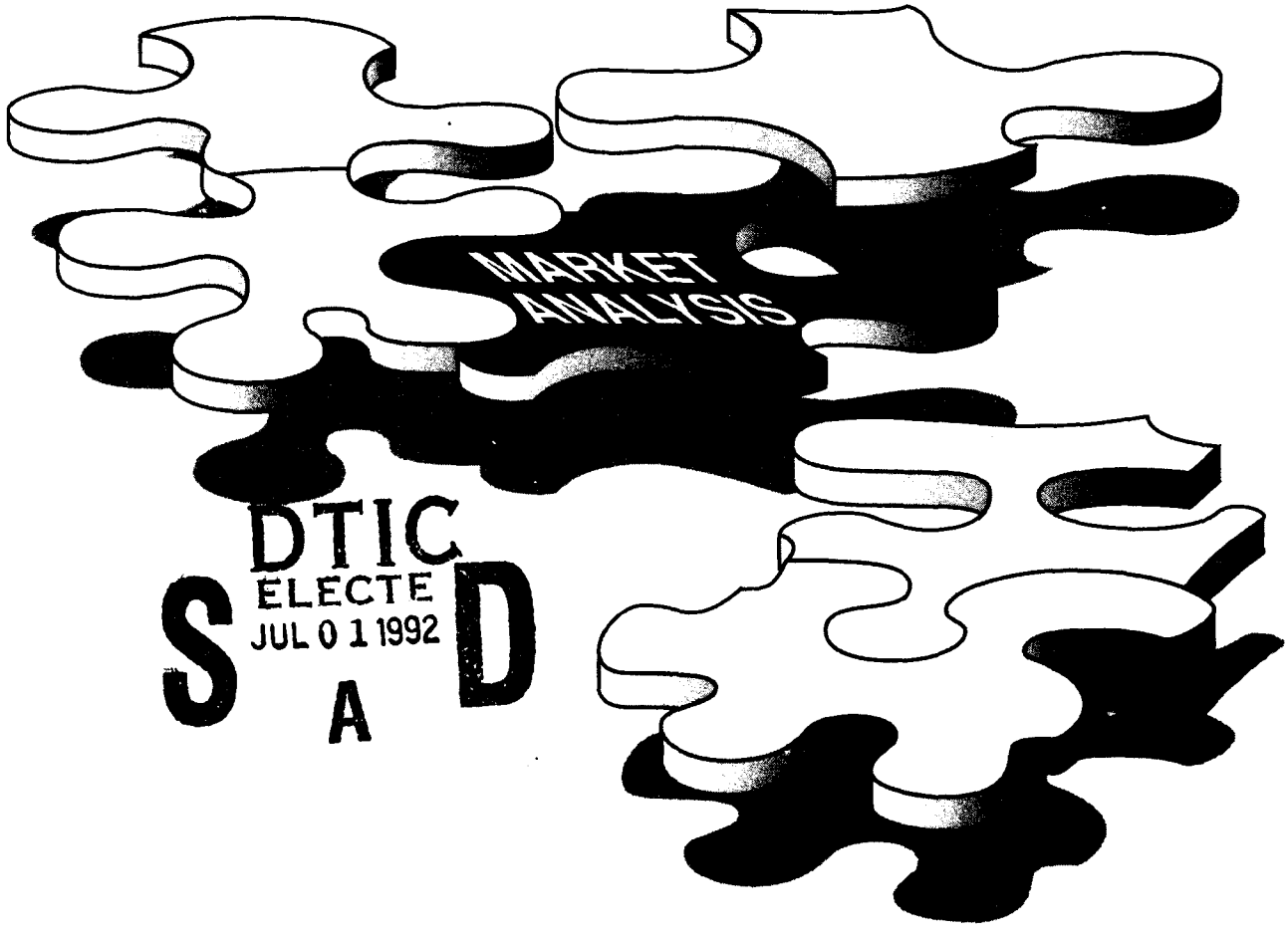

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Preface

The policy of the Department of Defense is to increase its acquisition of nondevelopmental items (NDIs), and without good market analysis, that task would be much more difficult. This brochure proposes a generic approach to market analysis that can be tailored to a wide range of acquisitions and organizational structures. All NDI acquisition personnel should find useful information in this brochure.

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Market Analysis for NDI

WHY DO MARKET ANALYSIS?

The Military Services and other Department of Defense Components continually monitor their capabilities to determine whether they have sufficient resources to meet their national defense missions. When this process reveals a gap between current capabilities and what the Service will need, the Service must decide whether it can close the gap by revising tactical or strategic doctrine, reorganizing, improving training, etc. If such changes are not sufficient, the Service can modify its equipment, buy more of the same equipment, or buy new equipment. The Service may also decide to buy items if its mission has changed, if it needs to replace old or damaged equipment, or if technological advances provide new equipment that is more effective.

Whenever a Military Service or DoD Component decides it must purchase equipment or other materiel (computer software, for example), it must conduct a market analysis to determine whether an existing product meets that need before undertaking expensive and time-consuming R&D to develop a new item. Market analysis is now required by statute.

The 1991 DoD Authorization Act amended 10 U.S.C. Sec. 2325(a) to require that DoD conduct "market research" before developing a new specification. Prior to that

amendment, Federal Acquisition Regulation (FAR)11.004 required that the Government conduct "market research and analysis" to ascertain the availability of commercial products to meet the identified need.

In accordance with DoD Directive 5000.1, *Defense Acquisition*, the Defense Components must consider a range of alternatives before beginning a new acquisition program. First, they must consider using or modifying an existing U.S. system and second, using or modifying an existing commercial or Allied system. They may start a new, unique development program only after all other alternatives have been eliminated. Part 6, Section L, of DoD Instruction 5000.2, *Defense Acquisition Management Policies and Procedures*, discusses policies and procedures for the use of NDIs. It states that market research should be performed to determine the sustainability and availability of NDIs prior to the start of development. While statutes and regulations highlight the importance of market analysis when a new need is identified, market analysis is just as important when updating requirements documents such as military specifications (MILSPECs) and is carried out in the same fashion.

Any existing product or item that can meet the DoD need with no more than minor modification is known as a "nondevelopmental item," or an NDI. NDIs are often grouped into several categories:

- *An NDI can be an item currently being sold in the commercial marketplace. Such items include everything from hand-held calculators and stopwatches for use in artillery batteries to office supplies, administrative vehicles, and telecommunications sets for ships. The Army's recent acquisition of the Beretta 9mm handgun as the standard personal defense weapon for the Military Services is an example of this type of NDI purchase.*

- *An NDI can also be an item that although not sold in the commercial marketplace, is nevertheless already developed. An example is a system or product previously purchased by another U.S. Government agency or available from a foreign government. If the Navy were to buy an icebreaker of a type already in the Coast Guard inventory (or even an additional ship in its own inventory), that would be an NDI purchase.*

- *Another category of NDI includes items from either of the above two categories that require only minor modification to fit into the environment anticipated for their DoD use. The key words in this category are "minor modification." When many and more complex modifications are required, the item becomes a developmental item rather than an NDI, and the benefits of NDI acquisition rapidly disappear. A commercial personal computer (PC) made rugged to withstand a dusty environment and higher levels of vibration is an example of a modified commercial item. The Army's purchase of the Chevrolet Blazer as a light cargo vehicle, the Air Force's purchase of the KC-10 aircraft, and the Marines Corps' acquisition of the AV-8 Harrier jet from the British are DoD NDI purchases in this category.*

- *A final category of NDI consists of parts, components, and subsystems incorporated into a larger system undergoing DoD development. For example, the Pratt & Whitney A 203T and the CFM56 are commercial engines used on the Air Force C-17 and KC-135 aircraft, respectively.*

The reason for such emphasis (now even statutory) on buying NDIs rather than developing new items is obvious: NDIs are usually cheaper and available sooner. Furthermore, experience with NDIs shows that, when they are properly bought to meet a DoD need, their quality tends to be as good as if not better than that of specially developed items. And, as can be seen from just the few examples cited, NDIs are available to meet the full spectrum of DoD needs, from simple consumer items to advanced major systems, and from normally civilian-type uses to uniquely military ones. Searching the world's marketplaces to find NDIs that meet a specific DoD need is "market analysis." This pamphlet is designed to help you perform market analysis.

MARKET ANALYSIS

Market analysis has two phases: *market surveillance and market investigation.* Market surveillance is all the activities that acquisition personnel perform to keep themselves abreast of technology and product developments in their areas of expertise. Acquisition personnel performing market surveillance are not looking to fill any specific need. While market surveillance is general and ongoing, market investigation has a narrow focus and a specific time frame. In response to a defined need, it focuses on specific types of items and results in a recommendation on whether or not NDIs can fill that need. The following sections discuss these two phases.

The Services do not have a specific group of people called market analysts; rather, many people are called upon to perform market analysis. Your participation may vary, depending on your organization and the types of items for which you are responsible. Further, market analysis is not confined solely to procurement to meet a need. When specifications are updated, market analysis is required to identify the current technology in the product area. Any person preparing a specification – a commercial item description, purchase description, or MILSPEC – must rely on market analysis to define the characteristics of the product.

Market Surveillance

When a new DoD need or equipment requirement is identified, the Service would like to be able to decide whether either of the following two propositions is valid:

- *It is likely that an NDI is available to meet the need.*

- *It is highly unlikely that an NDI can meet the need, and acquisition personnel should proceed to other alternatives.*

The DoD Component defining the requirement also needs to know whether an NDI would be available if the requirement were modified somewhat. Acquisition per-

sonnel must be able to say, for example, to the requirement definer: "If you can relax this part of your requirement statement, we can provide an NDI to fill your need at one-fifth the cost of a developed item, and we can deliver it in half the time. Can you relax it?" Acquisition personnel will be in a position to participate in such preliminary decisions only if they have an early and continuing involvement with the requirement definer and are informed about the market for the required items.

How do you become informed enough about the marketplace to be able to assist in these preliminary decisions? You rely on market surveillance to provide a general sense of products available in the market, as well as their characteristics and capabilities. Obviously, market surveillance is easier for some product areas than for others. For example, it is probably easier to stay abreast of the kinds and capabilities of fork lifts and other material-handling equipment than to keep current in product markets, such as computers, which have thousands of different products, all of which change rapidly. Either way, you must become at least as well informed about the marketplace as a corporate buyer would be.

A good base for market surveillance is subscribing to, and regularly reading, all the trade journals for a specific market. Personal contacts are another valuable source of information. Identify your counterparts in the other DoD Components and Federal agencies, if appropriate. Exchange tips and information with those other market analysts.

Other useful contacts are the DoD users of your equipment. If your specialty area lends itself to dialog with some or all of your users, they (who have a vital interest in getting good equipment fast and frequently are very well informed) can alert you to new products or new applications that meet their needs.

Industry representatives also can provide valuable information. Site visits to manufacturers of products can help you get a better feel for the realities of the industry than can glossy advertising and sales pitches. Such visits can help you gauge production prowess and capacity, which can be just as important to DoD as product characteristics. Industry shows, conferences, and symposia dealing with your product area are good sources of information. Talk to the manufacturer's representatives at these affairs. (The Procurement Integrity Act defines "procurement official" and restricts the type of information such officials can discuss with potential contractors. Unless you know you are a procurement official, you are not limited by the restriction.) Active membership in professional societies can also help keep you current.

Other published sources that can be useful include the following:

- *Manufacturers' catalogs*
- *Product data sheets*
- *New product announcements*
- *Industry guides (e.g., Thomas Register, Dun & Bradstreet)*
- *Federal Catalog System*
- *Unsolicited proposals*
- *Independent research and development reports*
- *Symposia proceedings*
- *Test and evaluation reports*

RESEARCH RESOURCES

Today, acquiring information is not a problem. Rather, the problem is trying to keep up with the massive amounts of information available in every area. Automated data bases can provide a quick, cost-effective way of keeping up with the published material in a field. Many data bases provide the full texts of articles covering a specific industry. For example, the Materials Business File contains information on technical and commercial developments in iron and steel, nonferrous metals, composites, and other materials; it covers more than 1,300 publications, including some less common sources such as dissertations and conference proceedings. Some data bases cover general business and economic information across the economy, while others cover one facet of business, such as new product announcements or product recalls.

Searching a data base can be an efficient way to pull together current information quickly. Automated data bases provide access to more complete information on a subject, and they provide information that the user may have difficulty acquiring on a regular basis. The user saves time by not having to remember which issue of a journal contained the relevant article; extensive indexes in these data bases allow the user to view information on a subject by entering keywords. The user does not have to organize files or keep them up to date.

Many other resources commonly used for market surveillance are also available in automated databases. Patent records can be searched on-line, as can industry registers such as Dun & Bradstreet and the Thomas Register. Information Handling Services is in the process of putting its 25,000 vendor catalogs on compact-disk read-only memory (CD-ROM). Subscribers will be able to view product descriptions, performance specifications, and technical drawings on a PC.

Appendix A, "A Sample of Automated Sources of Product Information," suggests some data bases that can help you do market analysis. While far from complete, it provides examples of the broad range of data bases currently available.

ADDITIONAL RESOURCES

Automated data bases are great, but subscriptions are expensive, and you have to spend a lot of time learning to use them. Instead of subscribing to individual data bases, you can subscribe to a service that affords access to a number of data bases

through a single point of contact. Many of the data bases mentioned in this brochure and particularly in Appendix A were located through a service called DIALOG, which contains 5,500 data bases (an individual data base may contain millions of records). Generally, the user pays an hourly rate for time connected to the data base, plus a charge for each record retrieved. The cost varies from data base to data base, depending on charges determined by the vendors. Many searches can be done for less than $100.

An automated search is more cost-effective than having an individual manually accumulate the same material, and of course, the cost of a bad decision is extremely high.

Most DoD personnel have access to DIALOG through the extensive library system in OSD and the Services. The librarians know how to search the data bases and should be able to help narrow down the search so that it will be most efficient. Information retrieved can be downloaded and retained in computer form or printed out.

Another way to acquire access to many of these data bases is through FEDLINK, a cooperative program of the Federal Library Committee (FLC). FEDLINK offers access to data base services at substantial discounts to Federal agencies through their libraries or information centers. FLC/FEDLINK also provides a variety of support services. Agencies must execute an interagency agreement to be able to use FEDLINK.

The Defense Technical Information Center (DTIC) furnishes a slightly different service called the Defense Gateway Information System (DGIS). DGIS provides a gateway to connect users to many database services – such as DIALOG, ORBIT, and BRS – and to some DoD-unique data bases. The SEARCHMAESTRO feature can help the user identify databases most likely to contain the desired information, and the user can then spend minimal time on-line. While DGIS offers the simplicity of a single access point, it does not provide subscriptions to any of the database services. Before using DGIS, users must negotiate contracts and passwords with the database services they wish to use.

Market Investigation

When a need is defined, in many cases market surveillance is sufficient to determine whether an NDI is available and no further investigation is needed. If, for example, a requirement is for a simple consumer item such as T-shirts, market surveillance is probably enough for you to say, "Yes, NDIs are available to meet this need." Perhaps a few phone calls to producers or visits to commercial stores to determine what is available will be enough. After all, once you've found NDIs that clearly meet the need, the market analysis job is complete. However, for more complex items, a market investigation may be needed.

For needs involving complex or expensive products, an in-depth market investigation is probably necessary. If market surveillance in these cases indicates that an NDI might be available to meet the need, a market investigation is initiated. It is not aimed at selecting sources to compete for a contract award; that takes place later in the acquisitionprocess. Rather, its purpose is to determine, with a high degree of confidence, whether any NDIs can truly satisfy the need, thereby saving DoD time and money.

The scope and extent of a market investigation depend on such factors as the anticipated dollar value of the item, its complexity, and the number of items needed. In the following subsections, we present a generic model of such a market investigation. The model provides enough detail to apply to complex, high-value items, but not all steps are necessary for all acquisitions; the model should be tailored to the specific requirements of your situation.

MARKET SURVEILLANCE IN THE NAVY: AN EXAMPLE

The Navy's Office of Safety and Survivability keeps abreast of all types of safety equipment. Its approach to NDI equipment is an example of market surveillance combined with user testing and some laboratory testing. It does not get involved with the more complex market investigations and does not usually react to a specific need before identifying potential NDIs.

Safety office personnel have a variety of methods of identifying items. They read trade journals, attend trade shows, place notices in the Commerce Business Daily, and discuss new equipment with people in the field. In brief, they are aware of drawbacks in current equipment and are always looking for NDIs that may resolve those problems.

After the NDI is identified, the Office of Safety and Survivability purchases a few copies and sends them to the field for a performance assessment. Some items are tested at the NDI facility in Norfolk, Virginia. If the assessment is favorable, additional purchases are recommended.

This process works well for safety equipment, because most items are inexpensive and rarely need modification to work in a military environment. If minor modifications are required, manufacturers are usually willing to make them in response to comments from users. Safety office personnel also report good support by the commercial firms in terms of providing parts lists, training manuals, training videos, and "800" telephone numbers for ordering replacement parts.

Who Should Be Involved in a Market Investigation?

To ensure that you obtain the appropriate information for deciding whether to proceed with an NDI acquisition, several types of experts should be involved in any market investigation. In some organizations, one individual may be responsible for several of the areas listed, and different organizations may structure the market investigation working group differently. But, whatever the case, the following specialties should be involved:

- **Market analyst.** *The market analyst is the person with overall responsibility for gathering and evaluating the relevant information. That individual may also be responsible for defining the requirement and/or preparing the specification. The market analyst has a base of knowledge of the product and industry and is responsible for ensuring that the item meets the requirement. The market analyst should be extremely conscious of the cost-quality tradeoff. If a serious attempt to use an NDI is to be made, it is important to resist the temptation to include in the requirement the best qualities of each available NDI, since doing so will mean that no one NDI can satisfy the requirement.*

- **User.** *The user is the customer and must be satisfied with the item's performance. The user's role is to make sure that the potential NDI can operate in the environment in which it must function and to refine the requirement as new information about potential NDIs raises the question of possible tradeoffs.*

- **Testing specialist.** *In an NDI acquisition, the emphasis is on test and evaluation as opposed to research and development. The test and evaluation specialist should be included in the market investigation working group to provide insight into the validity of any outside testing results and help specify the information needed to address the criteria defined for operational testing.*

- **Logistics specialist.** *The working group needs some members who are experienced in the support philosophy of spare parts, maintenance, warranties, and other support issues for the potential NDI.*

- **Program manager (PM).** *If the program has a PM, he or she should be included. The PM defines and executes the acquisition strategy.*

Four Parts of a Market Investigation

Market investigation is conducted to discover what NDIs are available and to determine whether they can meet a substantial portion of the defined requirements. We have divided the market investigation into four parts: identification of sources, survey of manufacturers, checking of references (current users), and evaluation. The first two parts overlap to some extent; the third task is separate because it is concerned with verifying information obtained in the earlier tasks. The following subsections discuss these parts.

Identification of Sources

The market analyst must identify potential suppliers of acceptable NDIs. The potential sources will be asked to participate in the market survey and furnish information on their products. In some industries or for some items, everyone may know the suppliers and their products. In that case, little effort is required to generate a list of potential suppliers. Other, more diverse industries require considerable effort to identify sources of acceptable products.

Adding new potential sources to a list of suppliers increases competition, which can lead to better products at lower costs for DoD. In some cases, this may be the first attempt to meet the requirement with a commercial item, and more effort may be required to identify as many potential sources as possible. New techniques may be required to reach sources that have not previously dealt with DoD.

The list of sources starts with information available from market surveillance. Known suppliers of items and those who have bid on contracts in the past can form the basic list. For certain products, the General Services Administration (GSA) Schedule will identify sources. Announcements of "Sources Sought" or "Request for Information" in the *Commerce Business Daily* (CBD) often produce a good response. When trying to identify new sources or reach suppliers that have not previously bid on defense contracts, advertising in trade publications may be more effective than advertising in the CBD. Almost every industry has some established structure

AUTOMATION TIP

Automated data bases can help generate a list of potential suppliers by relating a product description to a list of manufacturers. Data bases containing information on government contract awards can identify past suppliers and those that have contracted with other DoD activities or other Government agencies. Data bases covering commercial products and suppliers may specialize in one industry or may include products from many industries. Although we concentrate on manufactured items, data bases covering the service industries are available. Dun & Bradstreet offers the Electronic Yellow Pages, *a list of companies referenced by name and address that provides a brief description of products offered.* Thomas Register of American Manufacturers *is also available on-line. Several data base products are based on the information contained in the Federal Catalog System. Those data bases relate part numbers and national stock numbers (NSNs) to sources. Similar catalog data bases covering commercial products are also available. Appendix A provides more information on the data bases mentioned above.*

for allowing buyers and sellers to find each other. Advertise where the commercial buyers do.

Survey of Manufacturers

The survey of manufacturers may consist of a few telephone calls, or it may be a comprehensive questionnaire sent to a group of potential suppliers. In any event, it must be complete enough to discriminate between those items that would be totally unacceptable from those that potentially meet the need. Any written survey must not impose such a burden that the suppliers will not respond. The NDI handbooks published by OSD and the Services have sections on the types of questions that can be included in the survey of manufacturers. Tailor the amount of information collected to the value and complexity of the items sought. The following types of information should be collected:

- **General performance specifications.** *The general performance specifications are derived from the Service requirements. They should be placed at the beginning of the survey questionnaire to allow suppliers to determine quickly whether any of their products meet the requirement. When the survey is returned, the analyst can quickly decide whether the items submitted meet the basic requirements.*

- **Supplier capability.** *Capability can be assessed by asking questions such as how many years the company has been in business and whether it has the capacity to meet the expected demand. For some items, questions about the producer's capability to meet surge and mobilization demands need to be included.*

- **Market acceptability criteria.** *The survey can also determine a product's market acceptability. Information on whether the product meets the definition of a commercial product includes how long the supplier has manufactured the specific product, the dollar value or quantity of sales, and any catalog information on the item.*

- **Supportability issues.** *Questions on how the supplier distributes and supports the product are pertinent. Suppliers can provide information on how many parts are returned and on their policy regarding repair and replacement. Questions on warranties and on how the supplier supports discontinued models are also appropriate.*

- **Available test data.** *Suppliers may be able to provide test data from their own laboratories or from private laboratories. In some instances, those data can eliminate the need for further testing. On the other hand, it may make sense to purchase or lease a piece of the equipment and try it out in the field.*

- **References.** *One of the most important pieces of information is a list of those currently using the product. In the next part of the market investigation, the references are used to verify the information submitted by the supplier and to provide a commercial user's view of how the item performs.*

Appendix B is an example of a market research survey for a paint spray gun used when the Army converted from a MILSPEC to a commercial item description (CID).

The Paperwork Reduction Act of 1980 was passed to minimize the data collection burden imposed on business by Government agencies. The Office of Management and Budget (OMB) has established regulations for Government agencies surveying commercial businesses. If you want to send your survey of manufacturers to more than nine suppliers, you must obtain OMB approval of the survey. If you send the survey to nine or fewer suppliers, state in the cover letter that the OMB regulation does not apply to that survey. OSD is currently attempting to work out a procedure that would make it easier for you to do surveys during a market investigation.

THE ARMY TUGBOAT: AN EXAMPLE

The U.S. Army Mobility Equipment Research and Development Command (MERADCOM) conducted a market analysis to determine the feasibility of acquiring a commercial tugboat for harbor and inland towing. Since the tugboat is a complex system that has a high dollar value, MERADCOM performed an extensive market analysis. After market surveillance indicated that the requirement could probably be satisfied by modifying a standard commercial design, market investigation was begun by identifying commercial boat builders. To do so, MERADCOM used a variety of sources, including the Thomas Register, the Marine Directory, commercial marine periodicals, information obtained at the Workboat Show in New Orleans, an announcement in the Commerce Business Daily, and direct contacts. Eventually, 152 companies were sent copies of the survey outlining the Army's requirement. MERADCOM received 26 completed questionnaires representing 31 vessels.

The Army decided to discard those designs from which a boat had never been built and all responses that did not closely approximate the basic hull parameters. The preliminary evaluation narrowed the field to eight candidate tugboats. In an effort to identify additional builders, the Army investigators contacted shipbuilders, naval architects, and equipment suppliers. This second iteration of identifying sources resulted in the addition of one builder to the list of possible candidates.

The Army team conducting the market survey concluded that commercial designs with some minor modifications appear to meet the requirement. The team recommended that the nine vessels most closely meeting the requirement be investigated further.

After the survey questionnaire is mailed to potential suppliers, a follow-up contact will increase the response rate. Personal contact is best because it provides an opportunity to answer any questions about the survey. The follow-up step is particularly important to encourage suppliers that have not participated in defense work to respond. The final step is to evaluate the responses and choose those suppliers and products that will be investigated in more detail.

Checking of References (Current Users)

The goal of this part of the market investigation is to determine how a representative sample of items performs in actual use. In its response to the manufacturer's survey, the supplier should provide names of customers that currently own the equipment. Usually the supplier will provide commercial establishments as references, but in some cases, you may find that other DoD activities use the item. Because market investigation is not a source-selection process, it is not necessary to examine every product that potentially meets the requirement. A sample of representative products is adequate. The goal is to determine whether any NDIs meet the Government's need.

This part of market investigation may require funding, especially if you have to make on-site visits to commercial establishments. However, a market investigation is considerably less costly than building prototypes and conducting the extensive testing required during a full-scale development.

Depending on the type of items required, two approaches can be taken to verify the supplier's claims for its product. One involves having the Service personnel in the field use or examine a sample of the item under consideration. When it is feasible to do so, Service personnel should test the item in the field to determine whether it meets performance claims and operates satisfactorily. The Service may wish to rotate the equipment through several units to get feedback from a number of people. Alternatively, Service personnel may be brought to the site of equipment that cannot be easily transferred.

Field testing works better for products needing little or no modification for military use. The other approach is to have a team of experts (including representatives of the intended users in the Service, if possible) conduct an on-site interview with one or more current users of the item.

Acquiring items – by lease, charter, borrowing, or purchase – to test in the field is not always feasible. As an alternative, the customers identified in the supplier's response to the survey can be interviewed for information on how the item actually performs and the environment in which it is used. Some simple items can be checked by telephone calls to current users. The performance of some complex, high-value items can often be verified only by an on-site visit to inspect the item. Private-sector users are often willing to spend substantial time discussing the good and bad features of products. The working group experts should question their private-sector counterparts as much as possible to get sufficient technical knowledge of the equipment to make an informed judgment on whether it meets DoD's need. For example, the maintenance representative on the

working group should interview maintenance personnel who have experience with the item to determine their maintenance philosophy, how much maintenance is needed, whether parts are easy to replace, etc. Combining both approaches could produce the best results for some items.

THE ARMY TUGBOAT: ON-SITE INSPECTION

A major part of the market investigation for the Army tugboat described earlier was an on-site inspection of four of the candidate tugs that are in commercial operation. The four tugboats were representative of the nine candidates, and the Army selected them because all were in the same geographic area and could all be visited in a week. The Army team prepared a list of questions pertaining to each vessel and spent a day on each tugboat questioning the captain and the crew members.

During this part of the market investigation, the Army team performed several tradeoff analyses. It identified four areas in which the requirement would need to be revised if an NDI acquisition was chosen. The team performed an analysis for each of the following areas:

- *Crew Accommodations. None of the candidate tugboats could provide crew space complying with 46 CFR 92.20-20 requirements for individual crew member space. Either the requirement would have to be waived for a full crew of nine or the crew size would have to be reduced to eight.*

- *Length. The original requirement specified a length of 75 feet. Storage and crew requirements would be difficult to meet at 75 feet, but extending the length requirement to 79 feet would provide adequate space.*

- *Speed. The original requirement called for a light delivery speed of 12 knots, but none of the candidates could meet that requirement under any load conditions. A light speed of 11 knots was judged to be the maximum feasible.*

- *Draft/Range. The original requirement called for a maximum draft of 8 feet. The survey team analyzed the relationship between draft and range and stated that the full cruising range and the additional equipment items desired could be accommodated with a maximum loaded draft of 8.5 feet.*

In addition to doing the tradeoff analyses, the Army team identified several pieces of state-of-the-art equipment and determined that they could be accommodated by the candidate tugboats. The team recommended that an NDI acquisition be approved and provided a list of the changes needed in the original requirements document.

Evaluation

The fourth and final step in a market investigation is to evaluate all the information acquired during the investigation and determine whether an NDI acquisition is feasible. The result may be a determination that an NDI acquisition is not feasible, that one or more NDIs meet the need as stated, that NDIs can meet the need if certain requirements in the original statement are relaxed, that one or more NDIs could be modified to meet the requirement, or that NDIs can meet the need if certain requirements are relaxed *and* the NDIs are modified. The following exhibit outlines the market investigation process described in the preceding subsections.

EXHIBIT

Outline of Market Investigation

I. Summarize pertinent information from market surveillance
II. Identify potential sources
III. Survey potential suppliers
  A. Develop survey questionnaire
    1. General performance specifications
    2. Supplier capability
    3. Commercial criteria
    4. Supportability issues
    5. Available test data
    6. References
  B. Mail questionnaire to potential sources
  C Follow up to increase responses
  D. Analyze responses
IV. Check references
V. Evaluate information collected
VI. Determine possibility of meeting the requirement by using NDIs

PRINCIPLES

In discussing market analysis, we have described a general process that can be adapted to a wide range of NDIs and organizational structures. Underlying the process are five principles that need to be kept in mind when adapting it:

- ***Early involvement.*** *Perform market analysis early, while the requirement is still flexible. In a milestone process, you should complete the market analysis prior to Milestone 0, while the mission need is being defined. Additional analysis may be performed during concept exploration.*

- ***User involvement.*** *Involve users in the market analysis process and not merely in defining the requirement. Users can be active participants in the market analysis for large items or can be testers for smaller items. Try to involve users formally and informally. They can be formally involved in working groups, but informal lines of communication also should be maintained between users and the market analysts. Users in the field have access to new technology and new product information that needs to be conveyed to requirements definers. Users also play a major role in identifying problems with the current equipment.*

- **Iteration.** *Successful market analysis is an iterative process. If the analysis is done early and users are involved, the user has an opportunity to make tradeoffs in the requirement, and such tradeoffs make it more likely that an unmodified NDI can meet the need.*

- **Tailoring.** *The amount of time and money spent on market analysis should be related to the value of the acquisition and the complexity of the item to be purchased.*

- **Refinement.** *The analysis should always proceed from the general to the specific. Acquire a little bit of information on many producers and products and a lot of information on the few products that seem likely to meet the requirement. The market analysis should be structured to acquire only enough information to decide whether to proceed to a more detailed examination of NDI possibilities.*

APPENDIX A
A Sample of Automated Sources of Product Information

WHAT TYPES OF AUTOMATED SOURCES ARE AVAILABLE?

This appendix presents a sample of the many automated product information data bases available. New data bases frequently enter the market, and existing ones are enhanced frequently. They can help make market surveillance or market investigation easier. We present here three types of data bases: parts catalogs, text files, and Government contract information data bases.

- **Parts catalogs.** *Parts catalogs are sometimes referred to as logistics data bases; they contain the kind of information found in the Federal Supply Catalog. Many parts catalogs are limited to items that the Government has already bought and thus do not include a wide range of commercial items. However, they are still helpful in locating items falling within the broad definition of nondevelopmental items (NDIs) – items available in the market that do not require additional development. Anyone with access to these catalogs can collect information on specific parts or components such as manufac-*

turer's part number, national stock number (NSN), and a description of the part's characteristics (shape, size, and performance specifications). The extensive cross-referencing in these catalog data bases enables a user to search for a specific part by using any known piece of information about that part. Users can also search for items that meet a set of characteristics. Some catalogs also include procurement histories with unit prices. In contrast, other parts catalogs focus mostly on commercial parts and components. At least one commercial parts catalog (cited in this appendix) also references parts that meet military specifications (MILSPECs), providing a cross-reference between commercial parts and similar MILSPEC parts.

- **Text files.** *Text file data bases contain either the full text or an abstract of published material from a variety of sources. Bibliographic references are included. Some text files include broad coverage of business and economic information across all segments of the economy. Those data bases can be helpful in assessing the health of particular industries or even specific companies as part of market surveillance or investigation. Some text files specialize in one kind of information, such as new product announcements. Material for the files is gleaned from sources such as trade journals, newspapers, company press releases, company new product announcements, Government publications, or company annual reports. Almost any publicly available information may end up in one of these data bases. Users locate articles by using keywords.*

- ***Government contract information.*** *The data in Government contract information data bases come from the Federal Procurement Data System (FPDS) for contract actions over $25,000. Parts catalogs contain information on parts and components, but the contract information data bases can provide visibility of NDIs at the system or subsystem level. The kinds of information available include contractor's name and address, the Federal supply code for the item purchased, the Commercial and Government Entity (CAGE) code, the location at which the contract was performed, the identification of small or minority-owned businesses, the type of contract, and the dollar value. These data bases are also cross-referenced so that users can search on the basis of each piece of information. While most of the data are from the FPDS, most commercial vendors of contract information data bases have added some additional information or cross-references.*

WHAT INFORMATION IS PROVIDED BY AUTOMATED SYSTEMS ?

In addition to describing a sample of automated product information data bases, this appendix identifies a point of contact for potential customers. For complete information, a potential customer should contact the company representative. We describe three Government systems; two are parts catalogs and one is a text file. One parts catalog and the text file are free, while the other parts catalog requires a subscription. All the other systems

are offered by private companies and require subscriptions.

The data bases are arranged first by whether they are from the Government or a private company, then alphabetically by the name of the company producing the system. Some companies offer more than one system ("product"). We give the name and address of the company; a brief description of each product; an entry stating whether it is a parts catalog, a text file, or a procurement data file; the availability of the system (for example, on-line computer access or compact disk); and a point of contact for more information. Most of the companies provide a toll-free 800 telephone number and a facsimile (FAX) number.

HOW WAS THE SAMPLE SELECTED?

Many of the systems listed were discovered by using the DIALOG gateway system. Specifically, DIALOG File 230 has information on over 5,500 publicly available data bases accessible in electronic format including on-line, compact disk read-only memory (CD-ROM); diskette; and magnetic tape. File 230 includes data bases not available through DIALOG. An entry in DIALOG File 230 provides more information than is provided in this appendix, which merely summarizes the entries. In addition to identifying new data bases, File 230 also provided updated information on automated systems identified in an earlier brochure, "Locating Off-the-Shelf Items." In addition to the systems found in DIALOG, some systems were identified by reviewing trade journals.

WHAT AUTOMATED SOURCE INFORMATION IS NOT INCLUDED IN THIS APPENDIX?

Since this appendix only samples the kinds of information available in automated data bases, it does not include every data base for every industry or product. We do not warrant that the systems selected are the best systems of their type or that they might be the best to meet a particular need. The appendix excludes automated catalogs from a company that are limited to product information on the company's own products.

SOURCES

Government Systems

1. Air Force Acquisition Logistics Center (AFALC)
Wright-Patterson AFB, OH 45433-5000

Product description: Support Equipment Acquisition Management System (SEAMS) identifies support equipment for aircraft and missile weapon systems. SEAMS is the official MIL-HDBK-300, *Technical Information File of Support Equipment*. The system allows the user to search in a number of ways: by NSN, national item identification number (NIIN), item name, item characteristics, weapon system supported, Service using the item, etc. A line drawing of the equipment can be displayed using the appropriate graphics monitor. The file also provides the procurement history and life expectancy of the items.

Type: Parts catalog.

Availability: On-line from AFALC. User must have an account with the AFALC Integrated Information System (IIS). Both IIS and SEAMS are free to both Government and non-Government users.

Contacts: To establish an account with IIS, contact AFALC/LSE (AFOSEM) at 513-255-3400 or Autovon (AV) 785-3400. To subscribe to SEAMS, contact AFALC/LSE at 513-255-3454 or AV 785-3454.

2. Defense Logistics Services Center (DLSC)
74 North Washington
Battle Creek, MI 49017-3084

Product description: FED LOG provides the data used to produce (1) the Master Cross-Reference List, (2) the Management Data List (ML-C), (3) Air Force Interchangeability and Substitutability (I&S), (4) the Federal Item Logistics Data Record (FILDR), (5) CAGE codes, (6) the Federal Supply Classification (FSC), and selected portions of the Federal Item Name Directory. The data base also contains data unique to each Service, provided by the Services. The files can be searched on the basis of NSN, NIIN, CAGE codes, or part numbers.

Type: Parts catalog.

Availability: CD-ROM from DLSC. Limited to Government subscribers. Available in the near future.

Contact: AV 932-4676 or 616-961-4725.

Product description: Military Engineering Data Asset Locator System (MEDALS) – Contains unclassified information for locating technical data including such items as technical manuals and engineering drawings. MEDALS tells the user what information is available, where it can be obtained, and who the point of contact is. Data come from repositories such as the Air Force Logistics Center, Defense Logistics Agency Supply Centers, Navy Ships Parts Control Center and Aviation Supply Office, and the Marine Corps Logistics Base.

Type: Text file.

Availability: On-line.

Contact: AV 932-4754 or FTS 552-4754.

3. Office of the Assistant Secretary of Defense (Production and Logistics) [OASD(P&L)] System Implementation
The Pentagon, Room 3E788
Washington, DC 20301

Product description: P&L Automated Information System Database (AIS DATABASE) presents management, functional, and technical data on more than 300 acquisition- and logistics-related automated information systems used by DLA and the Military Services. AIS DATABASE identifies several types of information for each system in the data base, including related systems; a functional description; users; host system on which the automated system resides; and the hardware, software, and telecommunications required to access the system. AIS DATABASE also identifies logistics functions supported by the system such as maintenance, transportation, supply, etc.

Type: Text file.

Availability: Floppy disks ($5^1/_4$ inch, high-density). Initial version currently available, revisions underway.

Contact: 703-756-8420.

Commercial Systems

1. CAPS (Computer Aided Product Selection)
Cahners Technical Information Service
275 Washington St.
Newton, MA 02158-1630

Product description: This data base provides specifications, characteristics, and scanned images for integrated circuit semiconductor devices and components from 425 manufacturers. Product names and manufacturers, pin-for-pin replacements, and upgrades and downgrades are provided for 500,000 records, which include 150,000 discontinued and obsolete components. MILSPEC items are included.

Type: Parts catalog.

Availability: CD-ROM.

Contact: 800-245-6696, 617-964-3030, or FAX 617-964-5490.

2. DRI/McGraw-Hill
Defense and Aerospace Information Service
24 Hartwell Ave.
Lexington, MA 02173

DRI offers several products related to the defense market.

Product description: Federal Contract Awards Database contains information on Federal

prime contract awards. The data base allows keyword searching on contractor's name, FSC code, and purchasing activity.

Type: Contract data.

Availability: On-line through DRI, magnetic tape, diskettes, or hard copy. DRI will produce customized reports on an as-needed basis.

Product description: Defense-Net – provides abstracts of defense-related articles from journals, company releases, interviews, annual reports, and Government publications. The data base is cross-referenced by company, product, platform, and markets.

Type: Text file.

Availability: On-line through DRI or Teldan Advanced Systems, Ltd.

Contact: 202-663-7600 (DRI's Washington, D.C., office) or 617-863-5100.

3. Dun's Marketing Services (DMS)
Three Sylvan Way
Parsippany, NJ 07054-3896

Product description: Dun's Electronic Yellow Pages contains names, addresses, D-U-N-S number, primary and secondary standard industrial classification (SIC) codes, and number of employees for about 8.5 million U.S. businesses and professionals. The information is arranged into seven groups based on SIC codes: construction, financial services, manufacturers, professional services, retailers, services, and wholesalers.

Type: Text file.

Availability: On-line through DIALOG.

Product description: Dun's Market Identifiers has information on 2.3 million establishments that have five or more employees or over $1 million annual sales. Provides more specific data than that in the Yellow Pages.

Type: Text file.

Availability: On-line through DIALOG.

Product description: Dun's Million Dollar Directory covers 160,000 companies with a net worth of $500,000 or more. Contains more detailed information than the Yellow Pages.

Type: Text file.

Availability: On-line from DIALOG or CD-ROM from the producer.

Contact: 800-223-1026, 201-605-6000, or FAX 201-455-7203.

4. Eagle Eye (formerly MSRS, Inc.)
10 West Washington St.
Middleburg, VA 22117

Product description: The data base provides the prime contract awards data from the FPDS. The file is indexed and cross-referenced so that users can search on such items as FSC, contractor's name, contractor's location, purchasing office or command acquiring the item, and SIC code. The

producer has added cross-references to SIC codes and the parent company.

Type: Contract data.

Availability: CD-ROM from the producer.

Contact: 703-687-6777 or FAX 703-687-6278.

5. ECRI
5200 Butler Pike
Plymouth Meeting, PA 19462

ECRI (formerly the Emergency Care Research Institute) is a nonprofit organization specializing in information about medical devices and equipment. It offers two products.

Product description: Health Devices Sourcebook provides information on North American manufacturers, importers, and distributors of more than 5,000 medical devices and equipment. The data base also covers medical equipment services companies. A typical entry contains information on the manufacturer or distributor, the name and price range for the product, and the source of the information. ECRI plans to expand coverage to include foreign companies in the future.

Type: Parts catalog.

Availability: On-line through DIALOG. The producer offers custom search services. The Sourcebook is also offered in print.

Product description: Health Devices Alerts reports on hazards, recalls, and problems with medical devices. Information is gathered from over 500 publications, from reports to the Food and Drug Administration (FDA), and from health care professionals.

Type: Text file.

Availability: On-line through DIALOG and in print, published weekly.

Contact: 215-825-6000.

6. fedlog
Optical Publishing, Inc. (OPI)
155 W. Harvard St.
Fort Collins, CO 80525

Product description: Provides information on components used by the Government. Contains the Army Master Data File, CAGE codes, DO43, Master Component Repair List, and ML-C files.

Type: Parts catalog.

Availability: CD-ROM.

Contact: 800-869-7989, 303-226-3466, or FAX 303-226-3464.

7. Forecast International Inc./DMS
22 Commerce Rd.
Newtown, CT 06470

Forecast International offers two data bases that cover Government contractors and contract awards.

Product description: DMS/FI Contract Awards includes all nonclassified prime con-

tract awards over $25,000. The data are received from the FPDS. The data base is cross-referenced so that awards can be grouped into various categories.

Product description: DMS/FI Contractors identifies companies involved in domestic and international defense and aerospace programs. Data are gathered from a number of Government and public sources.

Type: Contract data bases.

Availability: Both data bases available on-line through DIALOG.

Contact: 203-426-0800 or FAX 203-426-1964.

8. Industry Data Sources
Information Access Company (IAC)
362 Lakeside Dr.
Foster City, CA 94404

Product description: The Trade and Industry Index database provides references for industry information from published sources in the United States, Canada, and other industrialized nations. The references focus on marketing and financial data for an industry, an industry sector, or a product. Each record contains an abstract of the original source and a complete bibliographic reference.

Type: Text file.

Availability: On-line through DIALOG, BRS Information Technologies, Data-Star, or Petro-Link (Society of Petroleum Engineers).

Contact: 800-227-8431, 415-378-5000, or FAX 415-378-5499.

9. INFOMAT International Business Predicasts Europe
Second Floor
19-25 Argyll St.
Oxford Circus
London W1V 2DU, United Kingdom

Product description: Provides abstracts of articles from newspapers and trade publications in 10 languages, translated into English. Information focuses on products, markets, and companies in Europe and the Third World.

Type: Text file.

Availability: On-line through DIALOG, Data-Star, or BRS Information Technologies.

Contact: Continental United States and Canada – 800-321-6388; in Ohio or outside continental United States – 216-795-3000.

10. Information Handling Services (IHS)
15 Inverness Way E.
P. O. Box 1154
Englewood, CO 80150

IHS offers several database products and is continually adding new products and services. Often several products may be packaged into a single subscription. Some of the data base products are limited to one industry or to a small group of related industries. Following are descriptions of some of the products offered.

Product description: Haystack contains data on more than 6 million manufacturers' parts. Items are referenced by NSN, NIIN, logistics reference number, item standardization code, item characteristics, manufacturer's name and FSCM, user-Service codes, and many other codes relating to the procurement and logistics of the part. The sources of data in Haystack include the Master Cross-Reference List, the Management Data List – Consolidated, and the Federal Supply Code for Manufacturers.

Type: Parts catalog.

Availability: On-line or on CD-ROM through the producer.

Product description: IC/Discrete Parameter Database provides data on microelectronic devices. About 1,000 manufacturers worldwide provide descriptive information on 644,000 active and 363,000 inactive components, such as microprocessors, diodes, integrated circuits, and thyristors. MILSPEC items are included. Data include replacement and alternative parts, pinouts, NSNs, and manufacturers' data sheets.

Type: Parts catalog.

Availability: CD-ROM or on-line through MasterNet.

Product description: DODISS Plus Qualified Products List contains summaries of standardization documents, DoD adopted industry standards, naval instructions and directives, and NASA documents. The data base includes the full text of all current military and Federal qualified products lists covering 1.5 million pretested products.

Type: Text file.

Availability: On-line through MasterNet or on CD-ROM. Batch access and search services also offered.

Product description: Vendor Master Directory is an index of 25,000 vendor catalogs. The index cross-references products and manufacturers, and provides a reference for the full text of the vendors' catalogs on microform. Starting in spring 1991, the vendors' catalogs, including drawings of the products, will also be available on CD-ROM .

Type: Parts catalog.

Availability: CD-ROM.

Contact: For all products – 800-241-7824, 303-790-0600, or FAX 303-799-4085.

11. Inventory Locator Service (ILS)
ILS Database Services
3965 Mendenhall Rd.
Memphis, TN 38115

ILS offers four data base products for specific industries. All the ILS databases include a bulletin board capability.

Product description: Aviation Industry Database covers aircraft parts in three data bases. The parts availability data base contains information on suppliers inventories and

on major aircraft manufacturers' cross-reference files. The overhaul capability data base contains information on where aircraft can be overhauled. The cross-reference data base contains 75 million records on parts, including such things as NSN, technical characteristics, DoD interchangeability, DoD procurement history, and other logistics references. Data for the files come from foreign and domestic manufacturers, airlines, dealers, and brokers.

Product description: Marine Industry Database covers marine vessel parts in the same format as the Aviation Industry Database. Manufacturers, fixed-base operators, users, dealers, and brokers supply data.

Product description: Power Industry Data Base covers power industry parts and services in same format as the Aviation Industry Database. Data are supplied by manufacturers, end users, fixed-base operators, brokers, and dealers.

Product description: Telecommunications Industry Data Base, covering telecommunications parts and services, includes only the inventory availability and the overhaul capabilities information. Manufacturers, users, dealers, and brokers supply information for the files.

Type: Parts catalogs.

Availability: All data bases are available on-line from producer.

Contact: For all products – 800-233-3414, 901-794-4784, or FAX 901-794-1760.

12. Jane's Defense and Aerospace News/ Analysis
Jane's Information Group
P.O. Box 1436
Alexandria, VA 22313-2036

Product description: Contains the complete text of the following Jane's and Interavia publications: *Jane's Defence Weekly*, *Jane's Defence Weekly Pacific Rim Edition*, *Jane's Airport Review*, *Jane's Soviet Intelligence Review*, *Interavia Aerospace Review*, *Interavia Space Markets*, and *International Defense Review*.

Type: Text file.

Availability: On-line through DIALOG.

Contact: 800-544-3678, 703-683-3700, or FAX 703-836-0029.

13. Jane's Information Group
Sentinel House
163 Brighton Rd.
Coulsdon, Surrey CR5 2NH, England

Product description: All of the Jane's publications are available in full text through DIALOG.

Type: Text file.

Availability: On-line through DIALOG.

Contact: Phone – 081-763-1030.

14. Microcomputer Software Guide Online

R. R. Bowker Company
245 W. 17th St.
New York, NY 10011

Product description: Describes 30,000 software programs offered by 4,000 producers and vendors. Provides information on programming language, hardware, price, and publisher's name, address, and telephone number. The data base is indexed and has descriptor codes for each record to provide search capability.

Type: Parts catalog.

Availability: On-line through DIALOG or Knowledge Index. Also available in print as *The Software Encyclopedia*, published annually.

Contact: 800-323-3288, 212-337-6989, or FAX 212-645-0475.

15. Parts-Master

National Standards Association, Inc. (NSA)
1200 Quince Orchard Blvd.
Gaithersburg, MD 20878

Product description: Provides detailed descriptions of military parts. The user can search on many features such as manufacturer's part number, NSN, PIIN, FSC, CAGE, technical characteristics, and more. Files contain procurement history for all Services. Data sources include Master Cross-Reference List, Army Master Data File, SPCC Cross-Reference File, Master Repairable Item List, and other DoD logistics databases.

Type: Parts catalog.

Availability: CD-ROM.

Contact: 800-638-8094, 301-590-2300, or FAX 301-990-8378.

16. PTS

Predicasts, Inc.
11001 Cedar Ave.
Cleveland, OH 44106

Predicasts offers several database products that bring together publicly available information on products and markets.

Product description: PTS Predicasts' Overview of Markets and Technology (PROMT) contains abstracts and full-text records from journals, newspapers, industry newsletters, research studies, corporate news releases, Securities and Exchange Commission (SEC) registration statements, company annual reports, and investment analysts' reports. The data base provides worldwide coverage of over 60 manufacturing and service industries. New products and technologies are covered, along with other areas of interest such as market size and trends, product sales, market plans, capital expenditures, R&D, and new or expanded facilities.

Product description: PTS F&S INDEX provides a short description and reference for articles from over 2,000 international publications. The database includes articles on trends in economics, labor markets, Government regulations, and other events that impact businesses. The database is linked to PTS PROMT so that the full text of relevant articles can be examined.

Product description: PTS Defense Markets and Technology provides abstracts of articles from over 100 defense journals and over 1,500 other business and trade publications. Information on major contract awards is also included, providing information on contractor, agency, dollar amount, award date, type of contract, and contract number.

Product description: PTS New Product Announcements contains the full text of news releases from companies describing new products or services.

Type: Text files.

Availability: All are available on-line from DIALOG, Data-Star, or BRS Information Technologies.

Contact: For all products – 800-321-6388, 216-795-3000, or FAX 216-229-9944.

17. Thomas New Industrial Products
Charles Dremann
Thomas New Industrial Products Database
Buckwalter Rd.
Phoenixville, PA 19460

Product description: Provides information on new products prepared from company news releases submitted to *Industrial Equipment News*, another Thomas publication. The database contains information on all types of industrial products for both foreign and domestic companies. A typical entry includes product features, performance specifications, prices, and the manufacturer.

Type: Text file.

Availability: On-line through DIALOG.

Contact: 215-935-7875.

18. Thomas Register Online
Thomas Online
One Penn Plaza
New York, NY 10119

Product description: The electronic version of the *Thomas Register of American Manufacturers*. The database covers about 148,000 companies, both public and private, and 110,000 brand names. Information is gathered from the companies through mail questionnaires and telephone interviews. A cross-reference identifying company name changes is included.

Type: Parts catalog.

Availability: On-line through DIALOG or on CD-ROM.

Contact: 212-290-7291 or FAX 212-290-7362.

19. TLRN

Innovative Technology Incorporated (ITI)
7927 Jones Branch Dr.
McLean, VA 22102

Product description: TLRN provides access to the information in the Federal Supply Catalog, several related Service files, and procurement history files. Users can identify items by NSN, NIIN, source of supply, manufacturer name, manufacturer's part number, technical characteristics of item, and other descriptions. TLRN can also provide links to other commercial data bases such as Commerce Business Daily On-Line, Dun & Bradstreet, and iNet (over 1,200 commercial and Government data bases).

Type: Parts catalog.

Availability: On-line from the producer and through FEDLINK and on CD-ROM. ITI will also provide tailored searches in batch mode on an as-needed basis.

Contact: 800-327-6154 or 703-734-3000.

APPENDIX B
Sample Manufacturer's Survey for a Paint Spray Gun

SUBJECT: *Market Research and Acceptability Survey for Proposed Commercial Item Description*

Gentlemen:

Existing regulations require that before a proposed commercial item description is prepared by Government activities a market research and acceptability survey be performed. This survey is an up-front analysis of the supplier's ability to produce the item covered by the commercial item description and the acceptability of that item by the commercial marketplace. We would appreciate your participation in this survey.

In view of the mutual benefits derived by both the supplier and the Government, it is understood that this survey will be at no cost to the Government.

SURVEY

1. Name _____
   Address _____
   Phone _____
   Point of contact _____

2. What types of distribution channels does your company have for the product covered by this specification?

   _____

   _____

   _____

3. What types of warranties are available?

4. What logistical support is available?

5. What have your commercial customers experienced with regard to the quality of your item?

   Example – Parts that have had to be replaced at a greater frequency than others. Frequency and average cost of service to customers of product (including repairs performed under warranty.)

   Note: Request names, addresses, and phone numbers of customers so that information provided may be verified.

6. Do you know of any new companies in the business of making this product?
   Yes _____ No _____

   If yes – Are they any good?

7. What is your present estimated annual rate of sales of the covered item to the commercial market place?

8. How long have you produced this item?

_____

9. How often (on average) is the subject item updated?

_____

10. What is the ability of your company to support products of yours that are out of production?

_____

_____

_____

Any supporting data for above questions would be appreciated.

In order to comply with established time limits, request your reply be furnished by _____. Correspondence should be addressed to

_____

_____

PAINT SPRAY GUN
(siphon-feed, heavy-duty)

– does not meet requirement
= meets requirement
+ exceeds requirement

AIR-OPERATED, SIPHON-FEED, HEAVY-DUTY

Size 1 – air volume consumption – 2.2 to 4.0 CFM _____
Size 2 – air volume consumption – 7.0 to 8.0 CFM _____

Assembly consisting of:

spray gun body
A. Aluminum alloy drop forging _____
B. Polished exterior surface _____
C. Hook for hanging the gun _____

Spray Head
A. Brass or bronze _____
B. Detachable type _____
C. Smooth nickel- or chrome-plated interior and exterior _____

Air cap and nozzle
A. External-mix siphon-feed type _____

Air cap
1. Brass or bronze _____
2. Smooth nickel- or chrome-plated interior and exterior _____
3. Self-centering on the nozzle _____
4. Fitted to spray gun head with a threaded retaining ring _____

Nozzle
1. Stainless steel _____
2. Hardness – Rockwell C of 48 – 60 _____

Siphon tube assy.
A. Spray-gun cup lid _____
B. Quick-release clamp _____
C. Gasket _____
D. Tube to deliver paint from cup to spray head _____
E. Lid with air vent hole and gasket to fit between lid and paint cup _____

Siphon gun cup

A. Heavy-duty _____
B. One-quart capacity _____
C. Aluminum alloy body _____
D. External stainless steel or aluminum alloy reinforcement ring permanently attached to the bottom _____

Valves

Replaceable

Paint

1. Trigger-operated _____
2. Stainless steel needle valve _____
3. Valve packing (one of the following): chrome, treated leather, fiber, or synthetic _____
4. Flow adjustable w/control knob on back of spray gun _____
5. Self-closing when the trigger is released _____

Air

1. Trigger-operated
2. Replaceable valve seat _____
3. Valve stem packing (one of the following): chrome, treated leather, fiber, or synthetic _____
4. Self-closing when the trigger is released _____